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THE ACQUISITION OF COMPLEX ENGLISH STRUCTURES BY ADULT NATIVE SPEAKERS OF ARABIC[1]

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This research was undertaken to examine further the acquisition of certain complex English structures by adult learners. D'Anglejan and Tucker (1975) had adapted and extended Carol Chomsky's earlier investigation of the acquisition of complex structures by English-speaking chdilren (1969; 1972) to French-speaking adult learners of English as a second language. Chomsky had found that sentences containing structures which deviated from a widely established pattern of English (e.g., John promised Mary to shovel the snow) or ones in which the surface structure was relatively inexplicit with respect to the underlying grammatical relationships were candidates for late acquisition. She identified five such specific structures and found that they were acquired in a regular sequence by the children in her study who ranged from five to ten years of age.

D'Anglejan and Tucker examined the order of acquisition of these same five structures by French-speaking adult learners of English at two different levels of proficiency. Their results indicated a developmental pattern similar to that reported by Chomsky with child native speakers. Furthermore, the data seemed to reveal interesting language learning strategies. For example, beginners tended to rely on semantic rather than on syntactic

information when interpreting ambiguous sentences. All subjects appeared to deal directly with the linguistic data of the target language. No evidence was found of any attempt to translate or to map French language structures onto those of English. In no instance were language learning strategies observed which differed from those reported in the literature for child native speakers. The authors interpreted their findings as lending general support to the creative-construction hypothesis (cf., Dulay & Burt, 1974; Ervin-Tripp, 1974).

The present study was designed to extend the work by d'Anglejan and Tucker to another group of adult learners who were studying English in a sociolinguistic setting very different from that of Canada. The present study comprised two separate investigations conducted with adult learners attending English classes at the American University in Cairo -- a university in the Arab Republic of Egypt. We shall describe first the methodology which was common to both investigations.

Test Materials

We used the same test materials devised by d'Anglejan and Tucker (1975). Each study consisted of four tasks.

Task 1. The first task was designed to test our subjects' (Ss') ability to discriminate between sentences such as: (a) "John is eager to see," and (b) "John is easy to see." These two sentences have a similar surface structure; but the underlying

relationships between the words are different. In sentence (a) John is the subject of eager and also the implicit subject of the complement verb see. This basic relationship is expressed by normal subject-verb word order. In sentence (b) the word order is misleading. John is actually the implicit object of the complement verb see. The implicit subject of the second verb is elliptic in the surface structure of (b) and the listener must understand that it is "someone else." According to Chomsky (1969), the child who has not yet learned the difference between these superficially similar sentences incorrectly processes sentences such as (b) to mean "it is easy for John to see" rather than "it is easy for someone to see John."

Our test comprised five type (a) sentences and five type (b) sentences arranged in random order (see Appendix 1). We used simple vocabulary in the sentences. The experimenter (E) read each sentence aloud, then asked a simple question probing the S's comprehension of the sentence.

Task 2. In this section we focused on the syntactic construction associated with the verb "to promise." The sentences: (c) "Don allowed Fred to stay," and (d) "Don promised Fred to stay," have similar surface structures; but the underlying syntactic relationships differ. In (c) as in a large number of sentences involving verbs such as tell, persuade, want, order or advise, the implicit subject of the complement verb is the noun immediately preceding it. This syntactic rule is known as the minimal distance

principle (MDP). In (c) Fred is the subject of stay. The verb promise is an exception to this general rule because in this case, the subject of the complement verb is not the immediately preceding noun but rather is the subject of the main verb: Don is the subject of promised and also of the complement verb stay. In order to comprehend sentence (d) correctly, the learner must know that the general rule is not applicable and that he must use a specific rule for the verb promise.

To test our Ss' ability to distinguish the underlying syntactic structure associated with promise from the general pattern for other verbs sharing a similar surface structure, we constructed three test sentences using the verb promise which we intermingled with seven control sentences involving verbs which follow the general syntactic rule. We added two additional ambiguous sentences which could be processed according to the general syntactic rule of sentence (c) or according to the specific rule for sentence (d). Each sentence was read aloud by E followed by a question to test the S's comprehension of the underlying meaning. The sentences are presented in Appendix 2.

Task 3. In this section we again examined our Ss' understanding of a particular syntactic structure which violates a general structural rule of English. We focused on the contrast between ask and tell in sentences such as the following: (e) "The girl asks the boy what to paint;" and (f) "The girl tells the boy what to paint." In (e) the implicit subject of paint is the

girl. Sentence (f) follows the general rule for this type of sentence in English: the implicit subject of paint is the boy. Chomsky found that some children who had not yet learned that the verb ask is an exception to the general rule interpreted sentence (e) according to the general rule for (f) and gave it the meaning "the girl asks the boy what he is painting." Others appeared to use ask and tell in free variation with the meaning for tell being assigned to both. We were interested in finding out whether our second language learners had acquired the general syntactic rule underlying sentences such as (f) and whether any developmental pattern might be revealed in their acquisition of the specific rule associated with the verb ask in sentences such as (e).

We adopted Chomsky's experimental strategy of showing Ss sets of pictures illustrating the two possible interpretations of each of six target sentences. One picture illustrated the correct interpretation; the other one, the incorrect interpretation. The S was shown both pictures simultaneously and E asked "Which picture shows the girl asking the boy what to paint?" Three sets of contrasting sentences, pictures and questions were used, so that each sentence occurred once with the verb ask and once with tell. Two inverse orders of presentation were constructed to minimize the effect of order on Ss' responses. One half of each group received order 1 and one half received order 2. The sentences are presented in Appendix 3. The pictures used can be found in d'Anglejan and Tucker (1975).

Task 4. Here we studied constructions involving and and although which were the ones acquired last by Chomsky's child subjects. We worked with sentences such as the following: (g) "Mother scolded Gloria for answering the phone, and I would have done the same;" and (h) "Mother scolded Gloria for answering the phone, although I would have done the same."

In both these sentences, the listener must understand what the speaker would actually have done. There are two possibilities: "I would have done the same" might mean "scolded Gloria" or it might mean "answered the phone." In (g) the conjunction and serves as a coordinator and "I would have done the same" refers to the first verb in the sentence. In (h) where the second clause is introduced by although, a subordinator, "I would have done the same" refers to the second verb.

Six experimental sentences were devised, three with and and three with although. We used two orders of presentation so that the sentences which involved and in order 1 appeared with although in order 2. The reverse was done with the although sentences. In this way we tried to minimize the effect of context on Ss' responses.

Sentences were read aloud by E followed by the question "What was it that the speaker would have done?" Half of the Ss in each group received order 1 and half received order 2. The sentences used are presented in Appendix 4.

Method

The complete battery of tests was administered individually to all members of the various groups described below. For each task, E (Waterbury) read the stimulus sentences followed by the questions. A sentence was repeated if necessary. There was no time limit set for answering. The Ss (except as noted below) were told they could ask for translations of isolated vocabulary items if necessary, but that the whole sentence would not be translated. The E recorded Ss' responses on answer sheets.

Analysis of the Data. The Ss' responses were scored as correct or incorrect. Group scores were tabulated and expressed as proportions of error. In certain cases, statistical analyses were performed on the data to determine the significance of the difference bewteen independent proportions. The results of each Task will be described separately.

Study 1

Subjects. All Ss for this study were undergraduate students in the English Language Institute of the American University in Cairo. There were two experimental groups -- beginners (BEG) and advanced (ADV) -- of 18 Ss each. All were Egyptian and native speakers of Arabic. The average age of the Ss for both BEG and ADV groups was 18.30 years. All Ss had completed 12 years of formal schooling. In the BEG group, ten Ss were males, and eight were females. Seventy-two percent had studied with English as the medium of instruction at school, and 28% had studied with French.

The BEG spoke an average of two languages, in addition to English. Fifty percent reported Arabic as the language they felt most comfortable speaking, 25% reported English and 25% French. Those that had studied with English as a medium of instruction did so for an average of 8.2 years. Sixty-one percent had studied English privately and 88.9% had parents who also spoke English. Almost all of the Ss in this group were frequently ($\bar{X}$ = 4.83 out of 5) exposed to English-speaking movies. All Ss claimed that school study helped them learn English, and that knowledge of English was necessary in their academic field (one can, therefore, assume their motivation to be fairly high).

The ADV group presented a somewhat different and slightly perplexing picture. Only one S was male, and 17 were female. Only 59% reported that Enlgish had been the medium of instruction at school. Of the remaining 41% (7Ss), three Ss had studied in French, 3 in German and only 1 in Arabic. The ADV Ss spoke, on the average two languages in addition to English. Sixty-four percent reported Arabic as the language they felt most comfortable speaking, 17.6% reported English and 11.8% French. The ADV Ss who studied with English as a medium of instruction reported doing so for an average of only 4.4 years, as opposed to 8.2 years for the BEG.

Both groups were enrolled in intensive two semester English language courses. The Ss had previously taken the Michigan Test of English Language Proficiency. Those who scored from 74 to 81 were placed in advanced classes, those who scored from 63 to 69

were placed in beginner classes. A score of 85 was required for admission as a full time undergraduate at the American University.

Results

Task 1. The control sentences 1, 2, 4, 7, and 9 in which the subject of the first verb is also the implicit subject of the second verb presented no difficulties for either group. These sentences could be translated quite literally into Arabic; therefore, they could be processed accurately if the Ss relied on translation for comprehension. However, as the results with the target sentences -- 3, 5, 6, 8, 10 -- indicate, if translation was used, it was not generalized. The results are presented in Table 1 together with those from the study by d'Anglejan and Tucker, as well as those from Study 2 with Ss from the DPS to be described on page 13. Egyptian BEG made fewer errors ($\bar{X}$ = .50) in processing the target sentences than did their French counterparts ($\bar{X}$ = .73). The Egyptian ADV, on the other hand, did not show much difference ($\bar{X}$ = .40) from the Egyptian BEG, but they did make more errors than the French Canadians ($\bar{X}$ = .14). In their paper, d'Anglejan and Tucker speculated that the high proportion of errors in the BEG group could be attributed to the fact that in French, the surface structure of the control sentences and that of the target sentences would not be the same; in fact the surface structure of a French sentence reveals its underlying structure, as in "Jean est triste de partir" (John is sad to leave) and "Le Président est difficile à voir" (The President is hard to see). This certainly appeared

to be the case in Arabic, where a sentence like "The President is difficult to see" would be translated as "the President is difficult to be seen" or "it is difficult for someone to see the President." This means that a native speaker of Arabic relying on literal translation, maintaining the English word order, would have difficulties with this particular structure. However, for this sentence results show (ADV = .28, BEG = .44). Overall there was no significant difference between Egyptian BEG and Egyptian ADV ($\underline{Z}$ = 1.43).

Table 1

Proportion of Error for Target and Control Sentences in Task 1

	Arabic ELI		French		Arabic DPS	
	BEG	ADV	BEG	ADV	BEG	ADV
Target Sentences (3,5,6,8,10)	.50	.40	.73	.14	.95	.36
Control Sentences (1,2,4,7,9)	.01	.00	.01	.02	.01	.00

It is curious that one particular sentence "the scientist is difficult to interview" presented difficulties for both groups, and that the ADV made more errors (ADV = .78) than the BEG (BEG = .67). Perhaps the verb $\underline{\text{to interview}}$ presented a semantic problem in addition to the syntactic one, and the ADV who were less concerned with syntax, stumbled over semantics. Cambon and Sinclair (1974) found a similar apparent regression in the older child $\underline{\text{Ss}}$

they tested and they hypothesized that this regression was perhaps due to what Piaget calls decentration.

Task 2. Again in this task, the differences between the BEG Egyptians and ADV Egyptians were minimal. However, in target sentences 3, 5, 9, the BEG Egyptians made fewer errors than the French BEG; but the Egyptian ADV made slightly more errors than the French ADV. Exceptions to ths Minimal Distance Principle did not appear to pose a problem for the Egyptians. Translation of the stimulus sentences and of the control sentences reveal no clues about their grammatical structures. The results are shown in Table 2.

Table 2

Proportion of Error a for Target and Control Sentences in Task 2

	Arabic ELI		French		Arabic DPS	
	BEG	ADV	BEG	ADV	BEG	ADV
Target Sentences (3,5,9)	.13	.07	.25	.04	.38	.13
Control Sentences (2,4,6,7,8,10,11)	.02	.05	.19	.05	.27	.04

We had assumed that Question 1 "The child asked the teacher to leave the room" would pose difficulty, and that students would have relied on the most likely semantic interpretation which violates the MDP. As Table 3 shows, this was not the case. The Ss

were surprised by the stimulus sentence, but most of them laughed and processed it correctly.

Table 3

Proportion of Child Responses and Teacher Responses to Sentences 1 and 12

	Arabic ELI				French				Arabic DPS			
	BEG		ADV		BEG		ADV		BEG		ADV	
	Ch/Te		Ch/Te		Ch/Te		Ch/Te		Ch/Te		Ch/Te	
Sentence 1	.22	.78	.11	.89	.80	.20	.65	.35	.73	.26	.53	.47
Sentence 12	1.00	-	1.00	-	.90	.10	1.00	-	.20	.80	1.00	-

In this task the Egyptian Ss made fewer errors than their French counterparts. In fact, the BEG egyptians did better than the French ADV. We can offer no explanations for these results: they do not seem to follow the general pattern observed so far.

Task 3. This section deals again with violation of the MDP. The results appear in Table 4. The difference between ADV and BEG was minimal. The Ss appeared to understand the MDP as they made few errors in processing the Ask question which violate it. Again the BEG Arabic Ss performed better than the BEG French, but the ADV Arabic performed slightly more poorly than the ADV French. However, the Ss did not respond as expected on the Tell questions. The BEG made many errors ($\bar{X}$ = .37). This finding is rather surprising in view of the fact that in Task 2, sentence 2, "the man told Donald to open his window," the BEG made no errors. Translation into Arabic offered no apparent clues.

Table 4

Proportions of Error for Target (ask) and Control (tell) Sentences in Task 3

	Arabic ELI		French		Arabic DPS	
	BEG	ADV	BEG	ADV	BEG	ADV
Ask	.30	.24	.50	.13	.68	.26
Tell	.37	.17	.17	.13	.36	.30

Task 4. This set of questions investigated the Ss' awareness of the difference between and and although. There is no ambiguity in Arabic: an Arabic speaker would say "Ann scolded Gloria for answering the phone and I would have scolded her too" "although I would have answered it too." There was no difference between the performance of the BEG and ADV Ss. As in the d'Anglejan & Tucker report, we have included the results of Task 4 in Table 5, which shows the proportions of error for all tasks. We have also included for purposes of comparison the control group of English native speakers (NS) tested by them.

Table 5

Proportions of Error in Five Test Structures

	Arabic		French		NS
	BEG	ADV	BEG	ADV	
Task 1					
easy to see					
fun to visit	.50	.40	.73	.14	.00
Task 2					
promise	.13	.07	.25	.04	.07
Task 3					
ask	.30	.24	.50	.13	.08
Task 4					
and	.14	.11	.55	.08	.11
although	.32	.31	.47	.78	.66

Discussion

D'Anglejan and Tucker found that their adult second language learners followed a pattern similar to that of native speakers of English between the ages of 5 and 10. They drew an analogy between the performance of Chomsky's younger Ss and their BEG Ss. Their ADV Ss performed familarly to the NS on the less difficult tasks and midway between the two groups on some of the more difficult items (1975, p. 292).

We did not find that our Ss fitted this pattern very well. The BEG Egyptians were more advanced than the BEG French and than Chomsky's youngest Ss. The Egyptian ADV seemed less advanced

than the French Ss on Task 1 (which should be the easiest), and more advanced on Task 4 (which should be the most difficult). On the whole it was our impression that the Ss did not map Arabic syntax onto that of English, nor did they seem to rely on translation as a clue to comprehension. They appeared to deal directly with the data in the target language.

This first study raised two questions: (1) was there enough evidence in the previous test to support the creative-construction hypothesis; (2) can presence or absence of mother tongue interference be demonstrated conclusively at the comprehension level. To further probe the hypothesis that second language acquisition followed the same order as first language acquisition and to provide data relevant to these two questions we conducted a second investigation with a different group of Ss.

Study Two

Subjects. All Ss for this study were adults enrolled in evening language courses at the Division of Public Service of American University in Cairo. There were again two experimental groups, BEG and ADV, of fifteen Ss each. All were Egyptians studying English as a second language. Their motives for studying English varied: some were university students who needed English for academic purposes, others needed it in their jobs, and others studied for the pleasure of it. We assumed that their motivation was fairly high: transportation poses a big problem in Cairo and commuting to the center of town where the University

is located three evenings a week for an hour and a half class, could not be considered a pleasant undertaking.

The average age of the BEG group was 31; that of the ADV, 28.5. All Ss, except for one, had completed 12 years of formal schooling. All Ss except for one, had gone to Arabic-speaking schools. In the ADV group, they had studied English as a subject for an average of 8.93 years whereas in the BEG group they had studied English for only 5.4 years. In the BEG group ten Ss were female, and five were male. They seldom spoke English outside the University; the reported mean for number of languages spoken, in addition to English was 1.87. The ADV group had a higher proportion of males, twelve as opposed to only three females. Forty percent of the Ss often spoke English outside the Unviersity. The reported mean for number of languages spoken was higher ($\bar{X}$ = 2.47), than that of the BEG group.

Materials. We used the same sentences as we had used in Study 1. In addition, the Ss were asked to translate a few of these sentences from English into Arabic as described below.

Task 1. The Ss comprehension of five control and five target sentences was tested as in Study 1. In addition, Ss were asked to translate two control sentences and two target sentences into Arabic. Half of the Ss performed the translation exercise after the comprehension task; half, before.

Task 2. As in Study 1, each sentence was read aloud and was followed by a simple question testing Ss' comprehension.

The Ss were also asked to translate sentences 1, 5, 8 and 9 before and after the comprehension task.

Task 3. The same method of presentation was used as in Study 1. In addition, each S was asked to translate one Ask and one Tell sentence.

Task 4. The same method of presentation was used as in Study 1. In addition, each S was asked to translate sentences 1, 3 and 5.

Method

Tasks were administered individually to all members of the BEG and ADV groups. The Ss could take as much time as they wanted to answer the questions and could ask for explanations of isolated words. The ADV group seldom needed repetition or explanation, but the BEG had to have each sentence read to them several times. There were some Ss who seemed to understand very little and therefore needed extensive explanations of vocabulary, yet answered some of the sentences correctly. The E could not detect any glimmer of light in their eyes as she read and reread the sentences. They seemed to process the syntax almost by rote rather than through some cognitive process.

In Study 1, Ss had expressed difficulty remembering the names in the test sentences. We decided, therefore, to randomly substitute Arabic names where we thought Ss might have problems. This did not seem to make any difference. Those who could pro-

cess the sentences could have done so with English or Arabic names, and those who couldn't were not helped by the change.

Results

Task 1. The control sentences 1, 2, 4, 7 and 9, in which the subject of the first verb is also the implicit subject of the second verb presented no difficulties to either group. Their surface structure is the same in Arabic and in English; therefore it would be hard to attribute errors to interference from the mother tongue. The target sentences 3, 5, 6, 8 and 10, however, have quite different surface structures in the two languages. "The President is hard to see" would be translated as "The President is hard to be seen," or "it is hard for someone to see the President." It was, therefore, assumed that signs of interference would be shown on the translation task. If the Ss could not answer the stimulus sentences correctly, yet translated them accurately, that would seem to indicate that their comprehension was good but that the syntax of their mother tongue got in the way. There was a significant difference ($Z = 11.8$) between the ADV and BEG groups on the English part of the test (see Table 1). The translation task, however, did not seem to indicate interlingual interference. In the ADV group 18 sentences were processed correctly in English and Arabic, 3 processed in English but not in Arabic, 4 were processed in Arabic but not in English and 5 were processed incorrectly in Arabic and in English. These results were not surprising as indicated by the low proportion of errors

by the ADV group ($\bar{X}$ = .36). The BEG group, on the other hand, with a proportion of errors of .95, would be expected to show signs of interference. Table 6 shows that this was not the case. Twenty-four sentences were processed incorrectly in both Arabic and English. When asked to translate into Arabic, the Ss seemed to deal directly with English rather than with Arabic, so that if they did not understand the sentence in English, they could not process it correctly in Arabic.

Table 6

Translation Task 1 for Target Sentences 3, 10

	DPS ADV	
	Arabic (+)	Arabic (-)
English (+)	18	3
English (-)	4	5
	N = 30	

	DPS BEG	
	Arabic (+)	Arabic (-)
English (+)	2	0
English (-)	4	24
	N = 30	

Table 6 (cont.)
Control Sentences 4,7

	DPS ADV			DPS BEG	
	Arabic(+)	Arabic(-)		Arabic(+)	Arabic(-)
English (+)	30	0	English (+)	24	6
English (-)	0	0	English (-)	0	0
	N = 30			N = 30	

Task 2. In this task the difference between the performance of the ADV and BEG was also significant (Z = 3.60) for target sentences. The ADV group made few errors on target sentences 3, 5, 9 ($\bar{X}$ = .13), while the BEG made significantly more ($\bar{X}$ = .38). The results of this task are shown in Table 2. Table 7 shows the results of the translation of sentences 5 and 9. Their surface structures are similar in Arabic and in English. Again, there seemed to be no evidence of interlingual interference at the ADV level, and it appeared to be minimal for the BEG.

Unlike the ELI Ss, the DPS Ss seemed to process sentence 1, "the child asked the teacher to leave the room," according to its more likely semantic interpretation, rather than in accordance with the MDP. Table 3 shows the proportion of child responses and teacher responses for all three studies.

Table 7

Translation Task for Target Sentences 5, 9

	DPS ADV			DPS BEG	
	Arabic (+)	Arabic (-)		Arabic (+)	Arabic (-)
English (+)	26	0	English (+)	18	3
English (-)	4	0	English (-)	7	2
	N = 30			N = 30	

Table 8 shows the results of translating sentence 1. Almost half of the Ss in the ADV group relied on a semantic interpretation in English, but on a syntactic one in Arabic. As in the study by d'Anglejan and Tucker (1975, p.289), the results of both tasks seem to indicate that the ADV Ss were aware of the potential conflict between the most likely semantic interpretation of the sentence (that it was the child who should leave the room), and that suggested by its syntactic form (that the teacher should leave the room). The BEG group showed minimal evidence of conflict; most of the Ss simply gave the most likely semantic interpretation.

Table 8

Translation Task 3 for Sentence 1

	DPS ADV			DPS BEG	
	Arabic (+)	Arabic (-)		Arabic (+)	Arabic (-)
English (+)	7	0	English (+)	3	1
English (-)	6	2	English (-)	2	9
	N = 15			N = 15	

Task 3. This section dealt again with violation of the MDP. The results appear in Table 4. The DPS Ss had difficulties with the MDP and made quite a few errors in processing the Ask questions ($\bar{X}$ = .68). They complained that the pictures were not clear and that it was difficult to distinguish the boy from the girl. The ADV students did not seem to face the same difficulties ($\bar{X}$ = .26; the difference between the two groups was significant (Z = 3.82). The Ss experienced relatively similar levels of difficulty with Tell sentences. The surface structures in Arabic are similar to those in English for both sets of sentences. The results in Table 9 seem to lend credence to the creative construction hypothesis. In the BEG group, 5 Ss showed understanding of the sentences in Arabic, yet processed them incorrectly in English. They seemed to deal directly with the target language

rather than using translation as a helping device. Table 9 also shows the results of the translation task with and sentences in Task 4. These have been included in this table because, according to Chomsky, acquisition of ask and of and occur at the same stage for English native speakers. If the BEG Ss had difficulty processing ask correctly in English, the same should be true for and. However, results indicated a stronger pull towards acquisition of the and structure than of ask. The and construction will be discussed in greater detail under Task 4.

Table 9

Translation of Ask and And Sentences

ASK

	DPS ADV			DPS BEG	
	Arabic (+)	Arabic (-)		Arabic (+)	Arabic (-)
English (+)	10	0	English (+)	5	0
English (-)	4	1	English (-)	5	5
	N = 15			N = 15	

AND

	DPS ADV	
	Arabic (+)	Arabic (-)
English (+)	7	0
English (-)	4	4

N = 15

	DPS BEG	
	Arabic (+)	Arabic (-)
English (+)	7	1
English (-)	4	3

N = 15

Task 4. This set of questions investigated Ss' awareness of the difference between and and although. These sentences proved to be the most difficult for the ADV ss and quite difficult for the BEG. In fact, as E proceeded with the test, she became aware that the difficulties encountered by the respondents were not accurately reflected in the score. The BEG, in particular, seemed to be answering the questions in one way or the other just to say something with very little comprehension taking place. Table 10 presents these data.

Table 10

Proportions of Error for Ask, And, Although and Although Adjusted According to Chomsky's Criterion

	DPS		ELI	
	BEG	ADV	BEG	ADV
Ask	.68	.26	.30	.24
And	.42	.51	.27	.22
Although	.55	.42	.65	.61
Although*	.73	.78	.81	.78

* Adjusted to Chomsky's (1972) criterion.

Chomsky (1972) had found that the and sentences which she included in her experiment to serve as a contrast to the although sentences proved to be interesting in their own right. Acquisition of Ask and And occurred at the same stage, but only after the children had mastered the And construction could Although be meaningfully scored as correct or incorrect. In the Although sentences "done the same" refers to the second verb, or the nearer one. However, in her experiment, Chomsky found that children "tended to choose the near candidate in the constructions of promise and ask to fill in a deletion when they followed the MDP." The same appeared to be true for second language learners. How then could one decide whether the Ss gave the correct answer out of knowledge or out of ignorance? According to Chomsky, if the S chose the first verb as referent for "I would have done the same" with the

and construction, as in: "Ann scolded Gloria for answering the phone and I would have done the same," then he could have demonstrated that he knew when to violate the general principles of English. If he then answered the although questions correctly, it would be because he knew that "I would have done the same," referred to the second verb. Therefore, we readjusted scores according to how the Ss had performed with the and constructions. Table 10 shows both although scores. The differences between the two groups were still small, but they had become more meaningful within groups. Nonetheless, it was surprising that the BEG seem to have performed better than the ADV on this task. Since E had the distinct impression, while interviewing them, that the BEG did not have a clue as to what they were hearing or saying!

Table 11 shows the proportions of error for the five test structures for all the groups tested. DPS and ELI, in Egypt and French and Native speakers in Canada.

Table 11

Proportions of Error in Five Test Structures for all Test Groups

	Arabic				French		NS
	DPS		ELI				
	BEG	ADV	BEG	ADV	BEG	ADV	
Task 1	.95	.36	.50	.40	.73	.14	.00
Task 2	.38	.13	.13	.07	.25	.04	.07
Task 3 ask	.68	.26	.30	.24	.50	.13	.08
Task 4 and	.42	.51	.27	.22	.55	.08	.11
although	.55	.42	.65	.61	.47	.78	.66
although adjusted	.73	.78	.81	.78			

Discussion

D'Anglejan and Tucker found that their French-speaking adult second language learners followed a pattern similar to that of native speakers of English between the ages of 5 and 10. They drew an analogy between the performance of Chomsky's younger Ss and their BEG Ss. Their ADV Ss performed similarly to the NS on the less difficult tasks and midway between the two groups on some of the more difficult items (1975, p. 292). In the present investigation, when we compared the performance of the DPS ADV group with that of the ELI ADV we found a pattern very similar to Chomsky's. There seemed to be enough variation among two of the groups of the Egyptian Arabic-speaking adult learners of English from the DPS and the ELI, both of whom we have labeled ADV, to

warrant grouping their scores to look for patterning or systematicity. It should be remembered, of course, that the designation of Ss in the present studies as BEG or ADV as well as in that by d'Anglejan and Tucker was arbitrary and was meant to indicate only a relative distinction. Table 12 shows that these adult learners of English as a second language seemed in general to follow the same order of acquisition for complex structures as child native speakers. A total of 33 Ss were included in this analysis. Twenty-one Ss (64%) fit the predicted pattern while only 12 (36%) violated this pattern.

Table 12

Order of Acquisition of Five Test Structures

	Easy to see	Promise	Ask	And	Although
Stage 1 n = 0	-	-	-	-	-
Stage 2 n = 3	+	-	-	-	-
Stage 3 n = 5	+	+	-	-	-
Stage 4 n = 10	+	+	+	+	-
Stage 5 n = 3	+	+	+	+	+

\+ indicates structure mastered

\- indicates structure not mastered

Proportion of Ss following pattern = .64 (n = 21)

Proportion of Ss deviating from pattern = .36 (n = 12)

The translation tasks in Study 2 seemed to show that there was very little interference from Arabic to English, particularly in sentences 3 and 10 of Task 1 where Arabic and English have different surface structures. The Ss in the BEG group from the DPS processed a number of sentences correctly, yet it seemed apparent that they understood very little. They did not seem to rely on meaning but rather tried to interpret the sentences in the target language by applying broad general rules and by guessing. Once again we found no evidence that they were mapping Arabic language structures onto those of English.

The results of this study confirm those of d'Anglejan and Tucker that the order of acquisition of complex structures by adult learners of English seems to follow, in a general way, that of native speakers. In addition, they seem to lend credence to one claim of a creative-construction hypothesis, that learners deal directly with the target language. Clearly a set of complementary longitudinal studies with adult learners seem called for at this point.

FOOTNOTE

1. This research was conducted while Waterbury was a graduate student at the American University in Cairo and Tucker was employed as a Project Specialists with the Ford Foundation in Cairo. The preparation of the manuscript was supported by a grant from the Canada Council to W. E. Lambert and G. R. Tucker and by a grant from the Ministry of Education of the Province of Quebec to A. d'Anglejan and G. R. Tucker.

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APPENDIX 1

Sentences Used in Task 1

1. Mary is anxious to go. Who will go?
2. The salesman is happy to oblige. Who will oblige?
3. The President is difficult to see. Who will see?
4. Peter is pleased to stay. Who will stay?
5. The scientist is interesting to interview. Who is doing the interviewing?
6. Christine is easy to influence. Who is doing the influencing?
7. John is sad to leave. Who will leave?
8. The Russian is hard to understand. Who does not understand?
9. Jack is eager to return. Who will return?
10. Anne is fun to visit. Who will visit?

APPENDIX 2

Sentences Used in Task 2

1. The child asked the teacher to leave the room.

   Who should leave the room?

2. The man told Donald to open his window?

   Who will open the window?

3. Fred promised Harry to leave quickly.

   Who will leave?

4. Bill persuaded Jack to read his letter

   Who will read the letter?

5. Andy promised him to lend him his bicycle.

   Who does the bicycle belong to?

6. Donald warned Henry to drive carefully.

   Who should drive carefully?

7. Fred advised Tom to leave quickly.

   Who should leave?

8. Mike asked Sam to lend him his car.

   Who does the car belong to?

9. Jim promised Peter to read his letter.

   Who will read the letter?

10. Joe ordered Bill to come quickly.

    Who will come?

APPENDIX 2 (continued)

11. Don allowed Fred to stay.

    Who will stay?

12. The teacher asked the child to leave the room.

    Who should leave the room?

APPENDIX 3

Sentences Used in Task 3

1. Which picture shows the girl asking/telling the boy what to paint?
2. Which picture shows the boy asking/telling the girl what shoes to wear?
3. In which picture did the girl ask/tell the boy what glass to choose?

APPENDIX 4

Sentences Used in Task 4

1. Anne scolded Gloria for answering the phone, and I would have done the same.

   What would I have done?

2. The lady fired her chauffeur for driving fast, although I would have done the same.

   What would I have done?

3. Mary criticized her friend for arriving late, although I would have done the same.

   What would I have done?

4. The General blamed the soldier for risking the boy's life, and I would have done the same.

   What would I have done?

5. Bill hit the man for taking the money, although I would have done the same.

   What would I have done?

6. The chief rewarded the fireman for entering our building, and I would have done the same.

   What would I have done?